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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re patent application of:

BAAR, David J.P. et al.

Serial No.:   10/021,313   Group Art Unit:

Filed: December 19, 2001

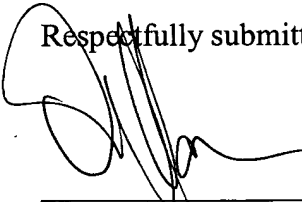Title: Method and System for Enhanced Detail-in-Context Viewing

January 21, 2002

The Commissioner of Patents & Trademarks
Washington, D.C. 20231

PRIORITY CLAIM

Dear Sir:

The benefit of the filing date in Canada of a patent application corresponding to the above-identified application, is hereby claimed under Rules 37 CFR 1.55 and 35 U.S.C. 119 in accordance with the Paris Convention for the Protection of Industrial Property. A certified copy of the corresponding Canadian patent application bearing Serial No. **2,328,795** filed **December 19, 2000**, is submitted herewith.

Respectfully submitted,

_____   _____
Date   Kevin Pillay
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La présente atteste que les documents ci-joints, dont la liste figure ci-dessous, sont des copies authentiques des documents déposés au Bureau des brevets.

This is to certify that the documents attached hereto and identified below are true copies of the documents on file in the Patent Office.

Specification as originally filed, with Application for Patent Serial No: **2,328,795**, on December 19, 2000, by **ADVANCED NUMERICAL METHODS LTD.**, assignee of David J. P. Baar, David J. Cowperthwaite and Mark H. A. Tigges, for "Application and Performance Enhancements for Detail-In-Context Viewing Technology".

Agent certificateur/Certifying Officer

January 8, 2002

Date

Canada

OPIC   CIPO

APPLICATIONS AND PERFORMANCE ENHANCEMENTS FOR DETAIL-IN-CONTEXT VIEWING TECHNOLOGY

Introduction

Detail-in-context presentations of data using techniques such as pliable surfaces[1] are useful in presenting large amounts of information on limited-size display surfaces. Detail-in-context views allow magnification of a particular region of interest (the "focal region") in a data presentation while preserving visibility of the surrounding information. Development of increasingly powerful computing devices leads to new possibilities for applications of detail-in-context viewing. At the same time, the development of new compact, mobile computing platforms such as handheld computers, typically with reduced computing performance and smaller display surfaces as compared to desktop or mainframe computers, has motivated research into alternate implementation techniques and performance improvements to detail-in-context data presentation technologies. This patent application addresses novel applications and performance enhancements to detail-in-context data presentation techniques, including, without being restricted to, the technique know as Elastic Presentation Space as described in reference 1.

Description of the Inventions and Claims

1. ### Application of Detail-In-Context viewing techniques to Adobe® Portable Document Format® (".pdf®") files

   The Adobe Portable Document Format ® ("PDF®") has become a standard format for electronic document storage and interchange. However, it is typically the case that presentation This patent application claims as an invention the use of detail-in-context viewing techniques to enhance viewing of PDF files, such techniques including, but not being restricted to, the technique known as ""Elastic Presentation Space" described in reference 1.

2. ### Performance enhancement: Restricted Rendering of Lens during Lens motion
   On computing devices with limited computational speed, it is desirable to reduce the number of computations required during the motion of the region of interest (the "lens") during such times that the lens is being moved to view new location in the data space. This patent application claims as an invention the rendering to a display device of only a restricted portion of the region of interest, such as the border or periphery of a lens, during the motion of a lens, so as to minimize the computations required to move the lens, and yet display to the user the changing location of the lens; at such times that the lens motion ceases or some other signal is provided by the user, a full rendering of the new lens can be performed.

3. ### Performance enhancement: Blending and Selective use of Data at Multiple Resolutions
   In the use of a detail-in-context data presentation on a map or image, it is often desirable to increase the spatial resolution or level of detail in the region of

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interest, and also to provide a smooth visual transition from the region of interest to the surrounding regions. It is beneficial if both of these capabilities can be accomplished with a minimum of computing resources (processing time and processor memory). In addition, in the case where the client device on which the data is viewed is physically separate from the data source (such as over the Internet), it is also desirable to minimize the amount of data that must be transferred from the data source (a server) to the viewer (the client). This patent application claims as an invention both:

i) the selective high resolution rendering to a display device of data within the focal region and neighbouring regions of a detail-in-context lens such as that described in reference 1, and the rendering of the remaining data at low resolution.

ii) The blending of the low and high resolution regions described in i) to provide a smooth visual transition, possibly through the use of averaging or admixtures of the high and low resolution regions.

References Cited

1. M. S. T. Carpendale, A Framework for Elastic Presentation Space, Ph.D. Thesis, Simon Fraser University, Burnaby, BC, Canada 1992